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(54) **ANTI-FACTOR XI MONOCLONAL ANTIBODIES AND METHODS OF USE THEREOF**

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(58) **Field of Classification Search**

None

See application file for complete search history.

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(57) **ABSTRACT**

Compositions and methods for inhibiting thrombosis without compromising hemostasis are described. Compositions include anti-factor XI monoclonal antibodies (aXIMabs) capable of binding to an epitope on the heavy chain of human FXI, particularly the A3 domain of the heavy chain of human FXI. Compositions also include epitope-binding fragments, variants, and derivatives of the monoclonal antibodies, cell lines producing these antibody compositions, and isolated nucleic acid molecules encoding the amino acid sequences of the antibodies. The disclosure further includes pharmaceutical compositions comprising the disclosed anti-factor XI monoclonal antibodies, or epitope-binding fragments, variants, or derivatives thereof, in a pharmaceutically acceptable carrier. Methods of the disclosure include administering the compositions described above to a subject in need thereof for the purpose of inhibiting thrombosis, reducing a required dose of an antithrombotic agent in the treatment of thrombosis, treating metastatic cancer, or treating an acute inflammatory reaction.

22 Claims, 14 Drawing Sheets